

What is claimed is:

Sub A

1. A semiconductor laser device comprising:

a first nitride based semiconductor layer including
5 a light emitting layer and containing at least one of indium,
gallium, aluminum, boron and thallium;

a ridge portion formed in a region having a
predetermined width on said first nitride based
semiconductor layer, having an upper surface having a first
10 width, and containing at least one of indium, gallium,
aluminum, boron and thallium;

a current blocking layer formed on said first nitride
based semiconductor layer and on said ridge portion, and
having an opening having a second width smaller than said
15 first width on the upper surface of said ridge portion; and

a second nitride based semiconductor layer formed on
said ridge portion inside said opening and containing at
least one of indium, gallium, aluminum, boron and thallium.

20 2. The semiconductor laser device according to claim
1, wherein

said current blocking layer is composed of a nitride
based semiconductor containing at least one of indium,
gallium, aluminum, boron and thallium.

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3. The semiconductor laser device according to claim
1, wherein

said first nitride based semiconductor layer
comprises an n-type cladding layer, said light emitting
5 layer, and a first p-type cladding layer, and
said ridge portion comprises a second p-type cladding
layer.

4. The semiconductor laser device according to claim
10 2, wherein

said current blocking layer contains aluminum and
gallium.

5. The semiconductor laser device according to claim
15 4, wherein

the ratio of the first width of the upper surface of
said ridge portion to the second width of the opening of said
current blocking layer is not less than 0.1 nor more than
0.95.

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6. The semiconductor laser device according to claim
2, wherein

said current blocking layer contains indium and
gallium.

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7. The semiconductor laser device according to claim 1, wherein

said second nitride based semiconductor layer is formed so as to cover a region above said opening and a region
5 on said current blocking layer.

8. The semiconductor laser device according to claim 7, further comprising

an type electrode formed on said second nitride based
10 semiconductor layer.

9. The semiconductor laser device according to claim 1, wherein

said current blocking layer has a single-layer
15 structure.

10. The semiconductor laser device according to claim 1, wherein

said current blocking layer has a multi-layer
20 structure.

sub A2 11. A method of fabricating a semiconductor laser device, comprising the steps of:

forming a first nitride based semiconductor layer
25 including a light emitting layer and containing at least one

of indium, gallium, aluminum, boron and thallium;

forming a ridge portion having an upper surface having a first width, and containing at least one of indium, gallium, aluminum, boron and thallium in a region having a

5 predetermined width on said first nitride based semiconductor layer;

forming on said ridge portion a current blocking layer having an opening having a second width smaller than said first width on the upper surface of said ridge portion; and

10 forming a second nitride based semiconductor layer containing at least one of indium, gallium, aluminum, boron and thallium on said ridge portion inside said opening.

12. The method according to claim 11, wherein

15 said current blocking layer is composed of a nitride based semiconductor containing at least one of indium, gallium, aluminum, boron and thallium, and

the step of forming said current blocking layer comprises the steps of

20 forming a striped insulating film on the upper surface of said ridge portion, and

forming said current blocking layer extending to a region, excluding the region having said second width, on the upper surface of said ridge portion from a region on said
25 first nitride based semiconductor layer on both sides of said

ridge portion by using a transverse growth technique.

13. The method according to claim 11,

the step of forming said first nitride based

5 semiconductor layer comprises the step of forming an n-type cladding layer, said light emitting layer, and a p-type cladding layer in this order, and

the step of forming said ridge portion comprises the step of etching said p-type cladding layer, except in a region
10 having said first width of said p-type cladding layer.

14. The method according to claim 12, wherein

said current blocking layer contains gallium and aluminum, and

15 the ratio of the first width of the upper surface of said ridge portion to the second width of the opening of said current blocking layer is not less than 0.1 nor more than 0.95.

20 15. The method according to claim 11, wherein

the step of forming said second nitride based semiconductor layer comprises the step of forming said second nitride based semiconductor layer for covering a region above said opening and a region on said current blocking layer.

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16. The method according to claim 15, further comprising the step of

forming an type electrode on said second nitride based
5 semiconductor layer.

17. The method according to claim 11, wherein the step of forming said current blocking layer

comprises the step of forming a single nitride based
10 semiconductor layer containing at least one of indium, gallium, aluminum, boron and thallium.

18. The method according to claim 11, wherein

the step of forming said current blocking layer
15 comprises the step of stacking a plurality of nitride based semiconductor layers containing at least one of indium, gallium, aluminum, boron and thallium.